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Instruction costs in the smaller Massachusetts high schools.

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BOSTON UNIVERSITY

SCHOOL OF EDUCATION

THESIS

INSTRUCTION COSTS IN THE SMALLER MASSACHUSETTS HIGH SCHOOLS

Submitted by

J. Turner Hood, Jr.
(A.B. Olivet,1916)

In partial fulfillment of requirements for the
degree of Master of Education

1 9 2 8

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Thesis

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Introduction

The writer has taught for ten years in the public schools of Michigan, Wisconsin and Massachusetts. These schools have varied in enrollment from sixty to nine hundred pupils. For the past four years he has been principal of a Massachusetts high school enrolling one hundred ten pupils.

Throughout this period of service, and particularly during the past four years, he has noticed that a great many classes were maintained having fewer than twenty-five pupils. It was further noticed that many of these classes ranged in size from one to ten pupils. This was especially true in the smaller schools.

In arranging his daily schedule of classes from year to year and noting the frequency with which these small classes appear, the following questions naturally arose.

Are other principals in similar sized schools faced with the same problem? What percentage of our classes are maintained for ten or less pupils? What particular subjects, if any, are the worst offenders in this respect? Is there any way to diminish the number of small classes?

In view of the alarm in many quarters over the steadily rising costs of seconday education, the writer hopes to be able to answer these questions and point out ways of improving the situation.

Procedure

In order to give some validity to the results it became necessary to secure data from as many of the smaller schools as possible. As it was practically impossible for the writer to visit the various schools personally to gather this data he endeavored to secure the cooperation of the principals of these schools.

A list of one hundred and sixteen schools was selected from the latest available report of the Massachusetts Department of Education. Due care was taken to select only schools reporting an enrollment of two hundred pupils or less and claiming to be a four year high school. A letter was sent to the principals of these schools explaining the problem and listing the small classes, together with the number of pupils enrolled, maintained in the writer's school. They were asked whether or not they had the same problem in their school; if they had and were willing to cooperate, they were asked to sign the enclosed, addressed postal card, stating the enrollment of the school, the number of teachers employed, and the name of the school. They were assured that the information desired could be placed on a questionnaire blank by the teacher in a very few minutes.

Sixty-five principals signified that they had the same problem, that they were interested, and that they would cooperate. Naturally, the writer agreed to send them the

tabulated results of the study. A sufficient number of blanks, together with a stamped, self-addressed envelope for their return, was mailed to each school so that each teacher could give the desired information in regard to the classes which she taught. A copy of the blank is included to show its simplicity as well as the data furnished. Every effort was made to make this questionnaire as "fool proof" as possible, but in spite of this there were a few that could not be used in this study due to the lack of essential information.

Some principals evidently lost their enthusiasm, for complete returns were received from only fifty-six of the sixty-five schools agreeing to assist in the work.

Since this was to be a study of instruction cost, only the salary of the teacher was considered, and further, only that part of her salary corresponding to the time actually spent in class instruction was taken as a basis for figuring the cost. In order that the comparison between costs existing in the various schools might be fair, it was decided to reduce all costs to a pupil-hour basis.

The approved Massachusetts high schools are required to maintain a session of one hundred and eighty days in length. To meet this requirement most of the schools have a forty week school year. The usual practice is to have a six period day of forty-five minutes. Some schools reporting have seven periods of approximately

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Data for a study in costs of instruction in Mass. High Schools
SCHOOL----------TEACHER----------SALARY----------

1 CLASS SECTION	2 Year in curriculum 1, 2, 3, 4	3 Number of Pupils	4 Number of periods per week
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

Any symbol may be used if a teacher does not care to give name.
In column I list separately class sections you are now teaching, indicating clearly the year in the course: e.g. English (first year) French (second year), etc.
In column 2 1 is equivalent to ninth grade, 2, is equivalent to tenth grade.
In column 3, give number of pupils now enrolled in the class sections.
In column 4, count double periods as 2: e.g. 3 recitations and 2 double laboratory periods are 7 periods.

How many periods are there in the daily schedule?----------

NOTE: Principals will please fill in this blank if they teach.

forty minutes. These schools were adjusted to a school day of six forty-five minute periods.

The formula used in figuring the pupil hour costs in this study is the one used by Kimball in his study of instruction costs made in Connecticut and published by the State Board of Education in 1924.

If a teacher receives an annual salary of $1200 and the school program calls for six periods per day, the formula would be

$$\frac{\$1200}{1} \times \frac{1}{40} \times \frac{1}{6} = \$5$$

per weekly block for one period per day. Assuming that she is teaching Algebra to twenty pupils at this period five times per week we would divide the $5 by 5 x 20 or 100, which gives us 5 cents, the pupil-hour cost for teaching Algebra.

Returns were received from two hundred and ninety-seven teachers and the pupil-hour costs for each subject in each school were obtained in this manner.

In making a comparative study of this kind the greatest value is found in comparing one group of schools with another. The variations found to exist between groups or between schools may be due to a number of causes, such as differences in teachers' salaries, differences in the teaching load or differences in size of classes. Noting where the differences in cost occur it may be possible to determine the causes for variation in individual schools.

For purposes of comparison the schools were divided into five groups, the division being an arbitrary one. The divisions were made on a basis of enrollment as follows: Group 1, those schools having two hundred one or more pupils; Group 11, schools having an enrollment from one hundred fifty-one to two hundred pupils; Group 111, schools having an enrollment from one hundred one to one hundred and fifty pupils; Group 1V, schools having an enrollment from fifty-one to one hundred pupils; and, Group V, schools having an enrollment from one to fifty pupils.

The point may be raised by some that the study was to be limited to schools enrolling two hundred or less pupils. The appearance of a few schools enrolling over two hundred pupils is accounted for thus: these schools reported their enrollment to the State Department of Education as of November 30, 1926; their enrollments as given on the questionnaires were as of December, 1927. They were retained in the study for the purpose of comparison to show that as the schools become larger their instruction costs tend to become smaller and that the percentage of smaller classes tends to lessen.

The Principal

The Principal of a small high school is usually the head teacher who receives a few hundred dollars more than the highest paid teacher under him. This extra compensation is granted, presumably, for his services as an

administrator and supervisor of instruction. After an examination of his daily program one is forced to the conclusion that the time allowed for supervision is negligible and, in the case of the very small schools is nil.

The question has been raised as to whether or not we should deduct that portion of the principal's salary for his administrative and supermisory duties. It was suggested that this might be done by subtracting from the principal's salary the salary of the highest paid teacher under him, the remainder being that portion of his salary which should be charged to supervision. This was not done. However, I feel that failure to do so will not invalidate the results. The cost used as a basis of comparison was the median and I believe it is safe to say that in very few, if any, cases does the cost of subjects taught by the principal fall at the median.

It was thought to be desirable to show certain facts in regard to the principal. With this in mind, Table 1 was prepared.

TABLE 1
Principals

GROUP	NO. OF SCHOOLS	SALARY HIGH	MEDIAN	LOW
1. 201 & over	5	2900	2700	2300
11. 151-200	5	2600	2400	2300
111. 101-150	16	3200	2500	2100
1V. 51-100	20	2700	2200	x1600
V. 1-50	10	3000	2000	x1700

x Women Principals

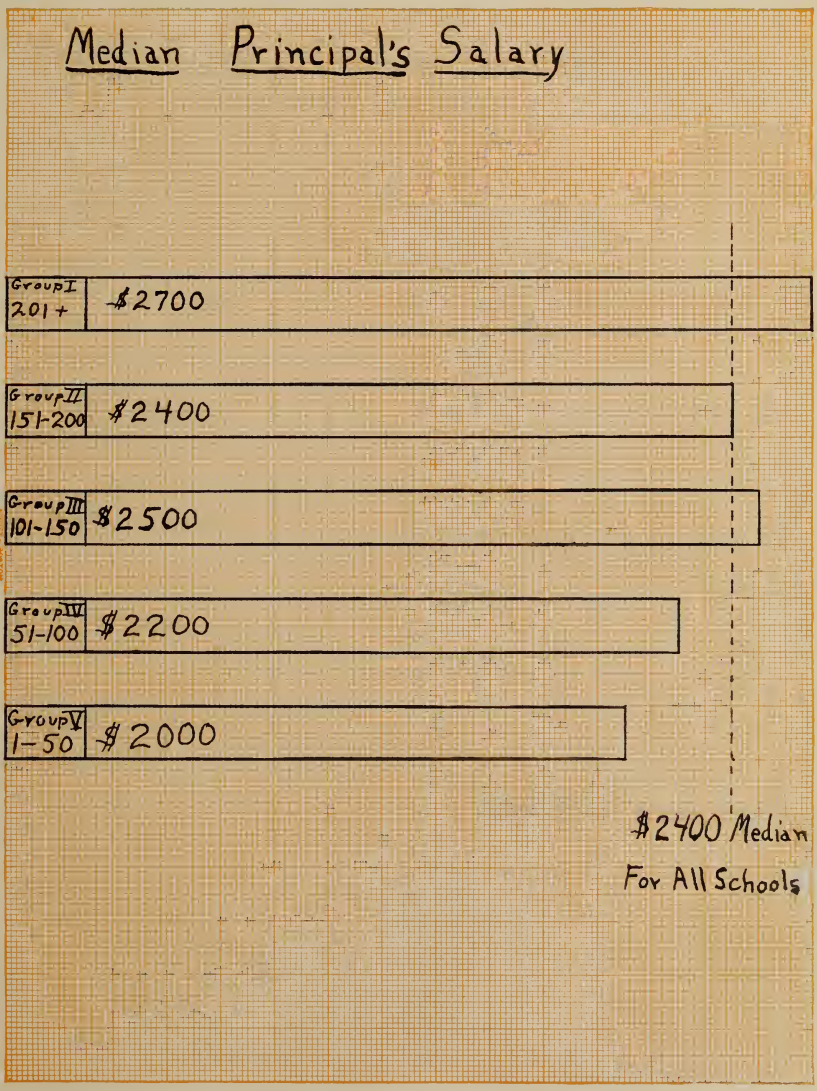
TABLE 1 (CONT.)
PRINCIPALS

GROUP	TEACHING LOAD			NO. CLASSES PER DAY		
	HIGH	MEDIAN	LOW	HIGH	MEDIAN	LOW
1.201 & over	505	340	125	4	3	1
11.151-200	281	120	105	3	2	1
111.101-150	770	309	135	6	3	2
1V.51-100	424	310	110	7	4	3
V. 1-50	405	180	65	6	5	2

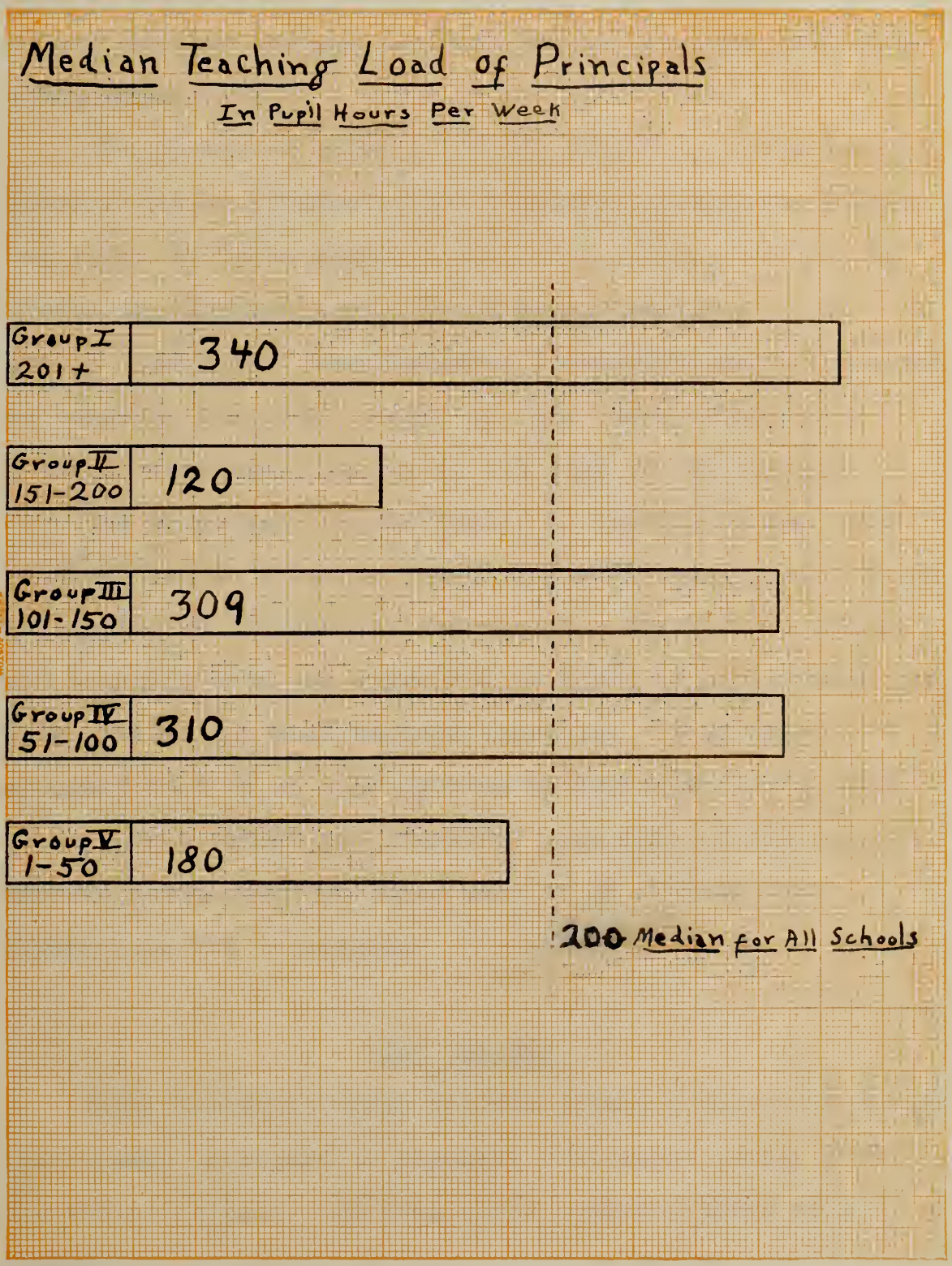
Reference to the table above shows that there is a fairly constant increase in the median salary paid the principal from the smallest to the largest school, with the exception of Group 11 which is slightly out of line. This is more clearly shown in Graph Number 1. The high salaries, however, do not show any such scheme. There seems to be no well defined schedule of salaries for principals based upon the size of the school. Instead, each community apparently pays what it feels it can afford or is forced to pay to retain a principal whom it has found to be satisfactory. This is notably true in the case of Groups 111 and V, the highest salary in Group V being higher than the highest in Group 1. The low salaries follow the tendency exhibited by the medians, namely, a gradual increase from Groups V to 1.

The teaching load, in pupil hours per week, as shown by Table 1 exhibits no apparent tendency of any kind, whether we examine the high, median, or low. This may be partially accounted for by the fact that while the principal of the smaller schools may teach more periods per

GRAPH I


Median Principal's Salary
Group I 201+
$2700
Group II 151-200
$2400
Group III 101-150
$2500
Group IV 51-100
$2200
Group V 1-50
$2000
$2400 Median
For All Schools

GRAPH II


Median Teaching Load of Principals
In Pupil Hours Per Week
Group I 201+
340
Group II 151-200
120
Group III 101-150
309
Group IV 51-100
310
Group V 1-50
180
200 Median for All Schools

day his classes are smaller in size. This definite lack of any clearly defined tendency may be noted by examining Graph Number 11.

The number of classes per day taught by the principal gives a better picture of his teaching assignment. Referring again to Table Number 1 we find a rather definite decrease in the number of classes taught as the size of school increases. This tendency is fairly constant whether we consider the high, median or low. Graph Number 111 presents this fact clearly in the case of the medians.

The principal, on the whole, in schools of the size studied here is a teacher receiving additional compensation for acting as the head of the school. Neither his salary nor teaching load, as expressed in terms of pupil-hours per week, follow any well defined schedule. It is quite apparent that he is not expected to supervise instruction to any great extent and, further, that most of his administrative duties must be taken care of at such time as classes are not in session.

The Teacher

Table Number 11 which follows presents much of the same information in regard to teachers that Table Number 1 did for the principals. In this case, however, there is a stronger tendency for the data given to follow some definite plan.

GRAPH III

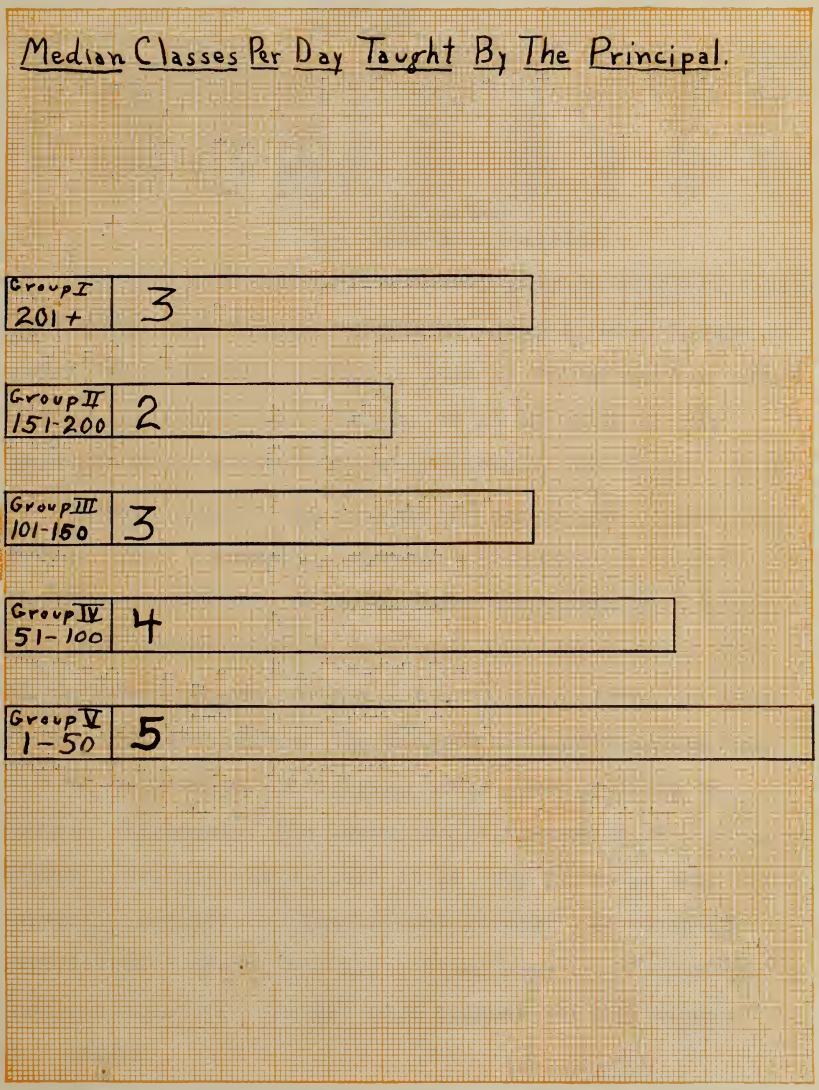

Median Classes Per Day Taught By The Principal.
Group I 201+
3
Group II 151-200
2
Group III 101-150
3
Group IV 51-100
4
Group V 1-50
5

TABLE 11
TEACHERS

	SALARY			TEACHING LOAD			PUPILS PER TEACHER		
GROUP	HIGH	MEDIAN	LOW	HIGH	MEDIAN	LOW	HIGH	MEDIAN	LOW
1	x2100	1500	1000	860	565	208	28	24	22
11	x2200	1600	1100	735	490	245	26	23	16
111	1750	1500	1100	465	425	146	24	20	16
1V	xx2000	1300	1000	775	376	146	23	16	13
V	1600	1350	1100	537	250	130	13	11	9

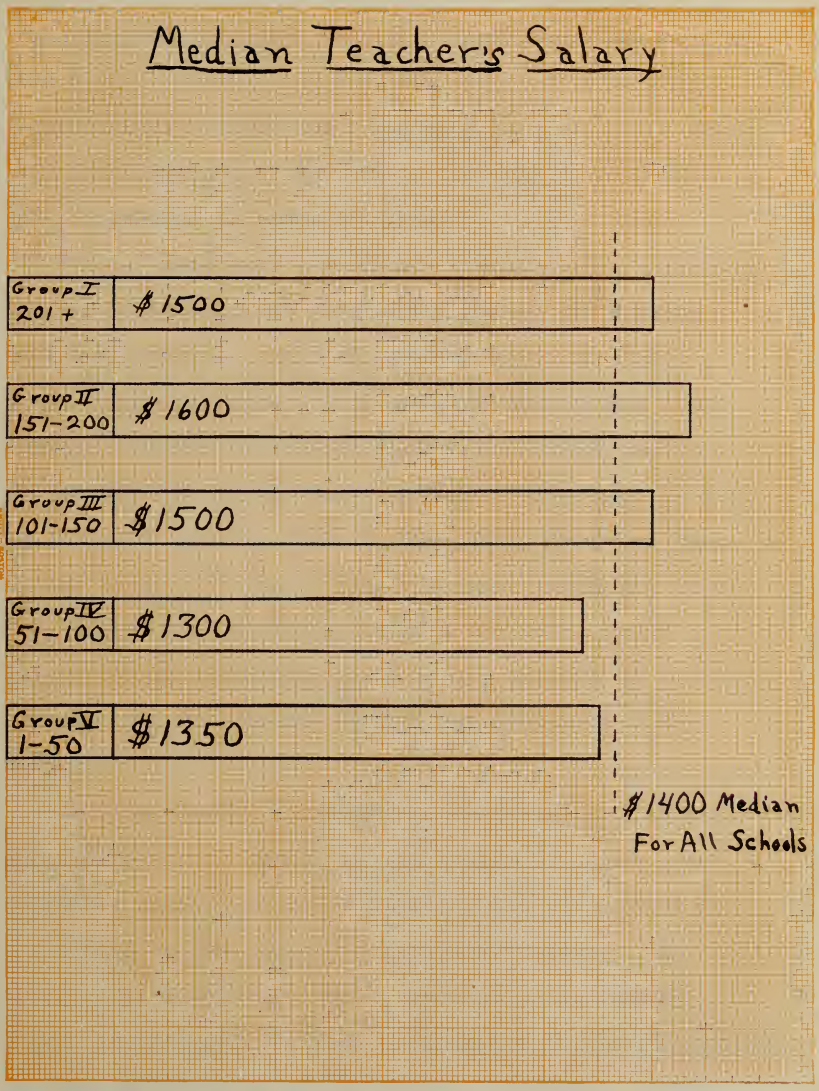
x Sub-Master
xx Coaches Athletics

We find that the median salary paid to teachers varies from $1350 in Group V to $1500 in Group 1, with Groups 1V and 11 slightly out of line. This is brought out in Graph Number 1V. The high salaries, as in the case of the principals, do not arrange themselves in any order. This is accounted for by the occasional appearance of some man teacher who, presumably, acts as sub-master or athletic coach and, no doubt, receives extra compensation therefor.

The lowest salaries paid vary slightly and the size of the school seems to have little if any effect on them. This is probably due to the fact that these teachers are without experience and serving their first year in the school. Strangely, the lowest salary reported is paid in Groups 1 and 1V. Here again it is very probable that each community decides for itself what it will pay to an unexperienced teacher, and there being many applicants for each position it can get some teacher for the amount it offers.

The teaching load expressed in terms of pupil-hours per week shows wide variation in the high teaching loads,

GRAPH IV

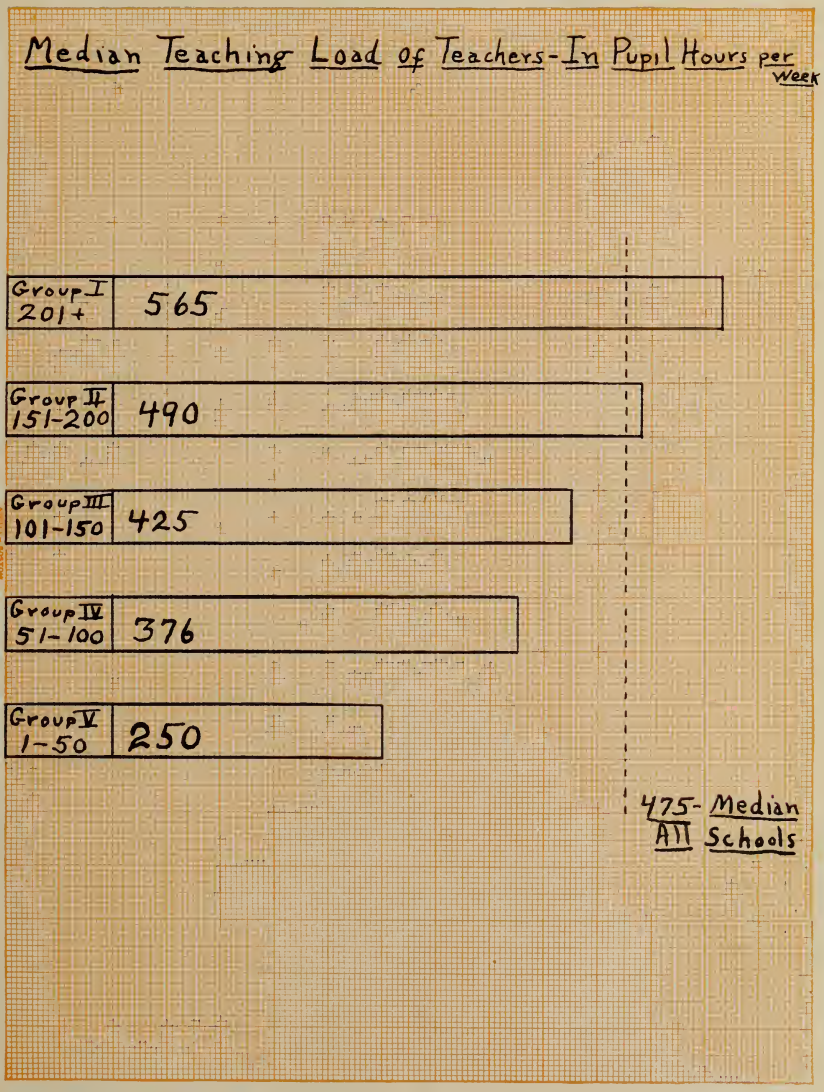

Median Teacher's Salary
Group I 201 +
$1500
Group II 151-200
$1600
Group III 101-150
$1500
Group IV 51-100
$1300
Group V 1-50
$1350
$1400 Median For All Schools

but a very regular increase from Groups V to 1 in the median teaching loads with 475 pupil-hours per week as the median teaching load of all teachers reporting. Graph Number V shows this tendency very clearly. The low teaching loads also show a tendency to increase as the schools increase in size.

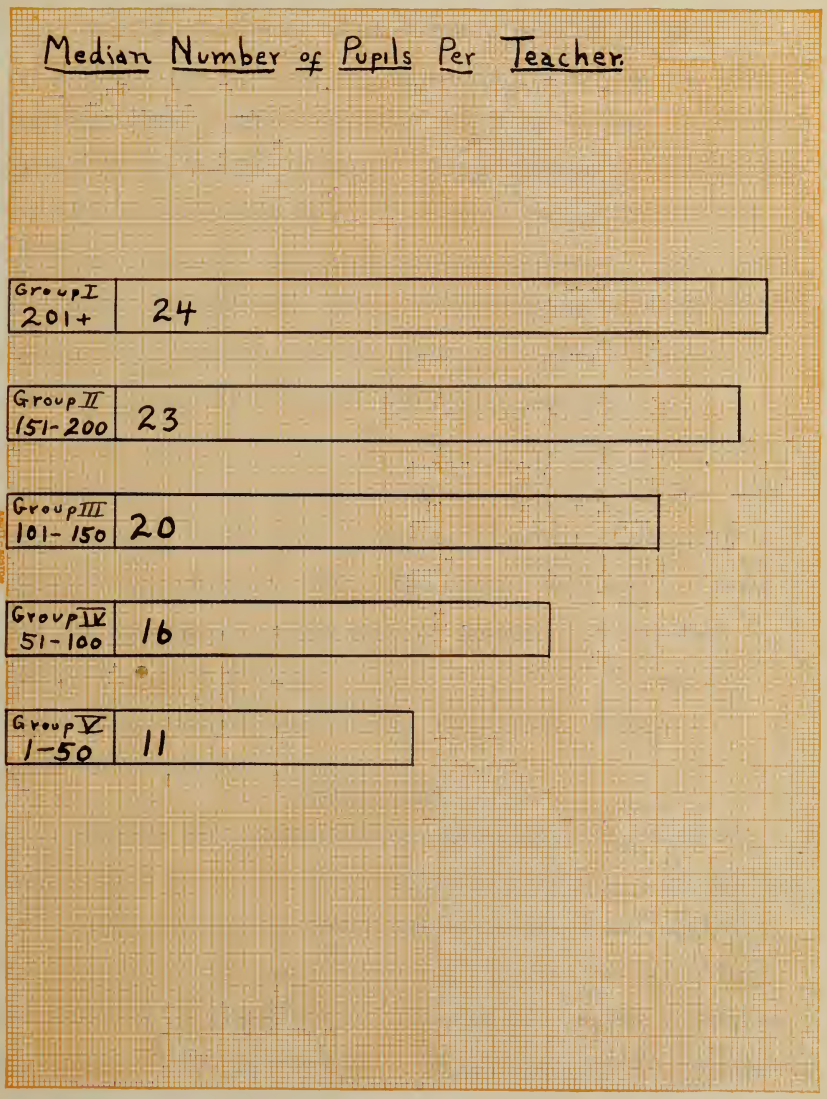
In no case does the median teaching load reach the figure recommended as reasonable for an efficiently organized school. This figure has been set at 625 pupil-hours per week and is computed as follows: the average teacher should instruct five classes per day of twenty-five pupils each, giving a daily load of 125 pupils, and meeting these classes five times per week brings us to the figure set, 625 pupil-hours per week. The teachers are instructing five or more classes per day but their teaching load does not measure up to the desired goal due to the controlling factor of class size.

Another factor determining the efficiency of the organization of a school is the number of pupils per teacher. This is found by dividing the enrollment of the school by the number of teachers employed. In every case, considering high, median, or low number of pupils per teacher, we find an increase in the pupil-teacher ratio as the size of the school increases. Graph Number VI shows this well defined tendency in the case

GRAPH V


Median Teaching Load of Teachers-In Pupil Hours per Week
Group I 201+
565
Group II 151-200
490
Group III 101-150
425
Group IV 51-100
376
Group V 1-50
250
475- Median All Schools

GRAPH VI


Median Number of Pupils Per Teacher
Group I 201+
24
Group II 151-200
23
Group III 101-150
20
Group IV 51-100
16
Group V 1-50
11

of the median pupil-teacher ratios.

The small number of pupils per teacher in the case of the smaller schools may be accounted for by the effort made by these schools to offer the same variety of courses given in the larger schools. Every community, regardless of size, seems determined to prepare its graduates for entrance into the exclusive Eastern Colleges. After this has been provided for, and if there be any teacher available, other courses may be offered for those pupils who have no desire or means of attending college.

This factor of wide curricular offerings necessarily results in a small number of elections per subject. The writer hopes to be able to set up a better program of studies for the very small high school which will retain the best features of the present program and yet make possible a more efficient administration of the school and a wiser expenditure of the tax-payers' money.

Class Size

The two principle factors controlling the cost of instruction are class size and teacher salary. Of the two it is difficult to determine which is the more important. Since salaries of the teachers as reported in this study do not vary as widely as do the size of classes it may be that this factor is one which should receive our immediate attention.

In order to study this factor intelligibly it is

necessary to define the term "small class." How small is a small class? The answer to this question approaches in difficulty the answer to that classic question, "How old is Ann?"

It is rather definitely agreed that a teacher may be expected to instruct a class of twenty-five pupils without placing any undue strain upon her. In view of this, is it not reasonable to say that any class maintained for ten or less pupils is uneconomical?

In Table Number 111 which follows, the size of classes was tabulated under such headings as 1-5, 6-10, etc., up to 36 and over for each of the five groups of schools. Computations were then made showing the percentage which the number of such classes under each heading were of the total number of classes reported for each group of schools.

TABLE 111
CLASS SIZE[1]

PERCENT OF CLASSES UNDER EACH SIZE				
GROUP	1-5	6-10	11-15	16-20
1	01.3	09.6	14.0	16.2
11	01.4	18.1	18.1	18.8
111	08.6	16.9	22.7	21.1
1V	17.2	23.7	23.3	18.3
V	25.3	38.2	24.7	09.1

TABLE 111 (CONT.)
CLASS SIZE

PERCENT OF CLASSES UNDER EACH SIZE				
GROUP	21-25	26-30	31-35	36 & over
1	19.2	21.8	10.5	07.4
11	18.8	18.1	04.7	02.0
111	13.8	09.2	04.2	03.5
1V	11.2	03.4	01.7	01.1
V	01.1	01.6	----	----

1 See Page 58

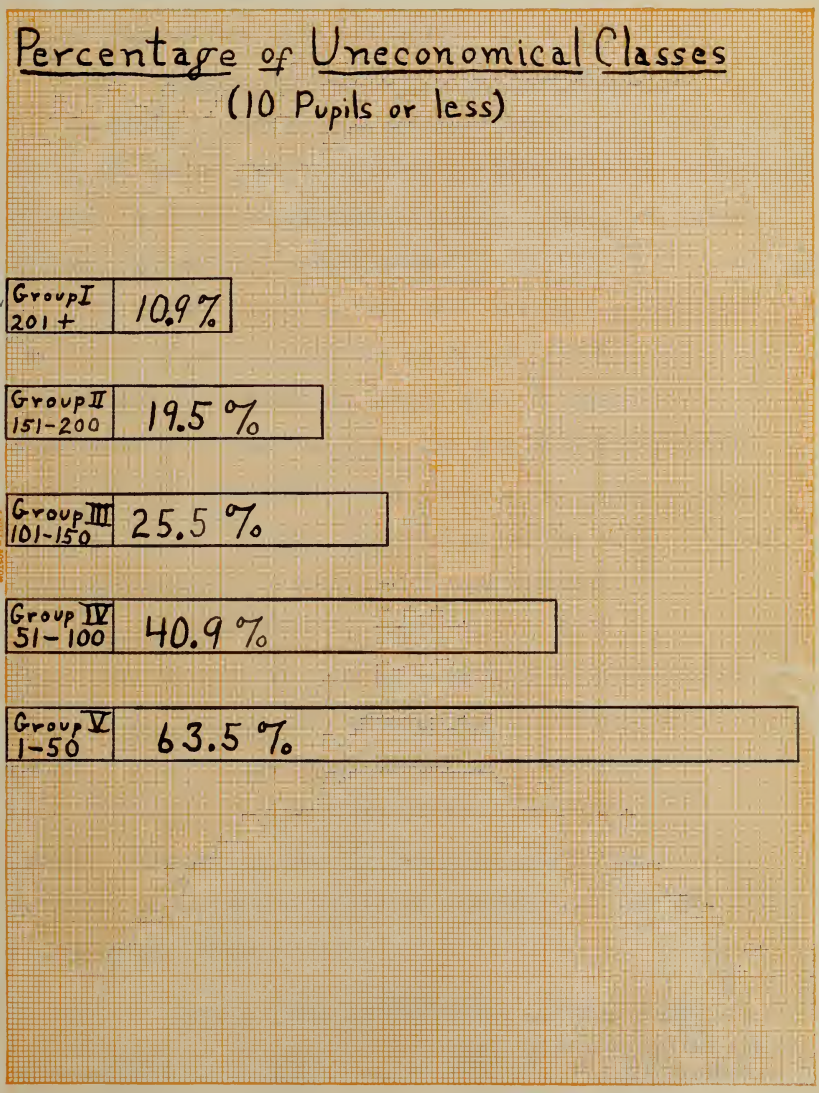
Combining the percentages listed under the headings of 1-5 and 6-10 we find that Group V is maintaining 63.5% of its total number of classes for ten or less pupils, Group 1V 40.9%, Group 111 25.5%, Group 11 19.5% and Group 1 10.9%. Graph Number V11 presents these same facts in a more vivid manner. Even more arresting are the facts in regard to the thoroughly extravagant practice of maintaining classes for from one to five pupils. Here we notice that Group V, as is to be expected, is the worst offender with 25.3%, Group 1V 17.2%, Group 111 8.6%, Group 11 1.4%, and Group 1 1.3%.

In view of the above mentioned facts it may well be questioned whether it is advisable or even justifiable to maintain a four year high school of less than 100 pupils unless the locality is so isolated that it is impossible to send pupils to a high school of good standing.

The consolidated high schools in operation in other sections of the country offer an apparent solution of this difficulty, but it is doubtful whether New England with all its petty jealousies and local pride could produce two or more towns willing to relinquish their absolute control over this phase of public education.

These small and expensive classes are maintained for the most part because of attempts to meet entrance requirements of a certain few colleges, as mentioned above. Another cause is the retention of certain traditional sub-

GRAPH VII


Percentage of Uneconomical Classes
(10 Pupils or less)
Group I 201 +
10.9%
Group II 151-200
19.5%
Group III 101-150
25.5%
Group IV 51-100
40.9%
Group V 1-50
63.5%

jects in the program of studies without regard to the actual demand for these subjects.

MEDIAN COSTS IN CENTS FOR ALL SUBJECTS

A study of the median costs of instruction as reported by the schools will throw some light upon the efficiency of the organization of those schools. Table 1V, which follows, gives that information.

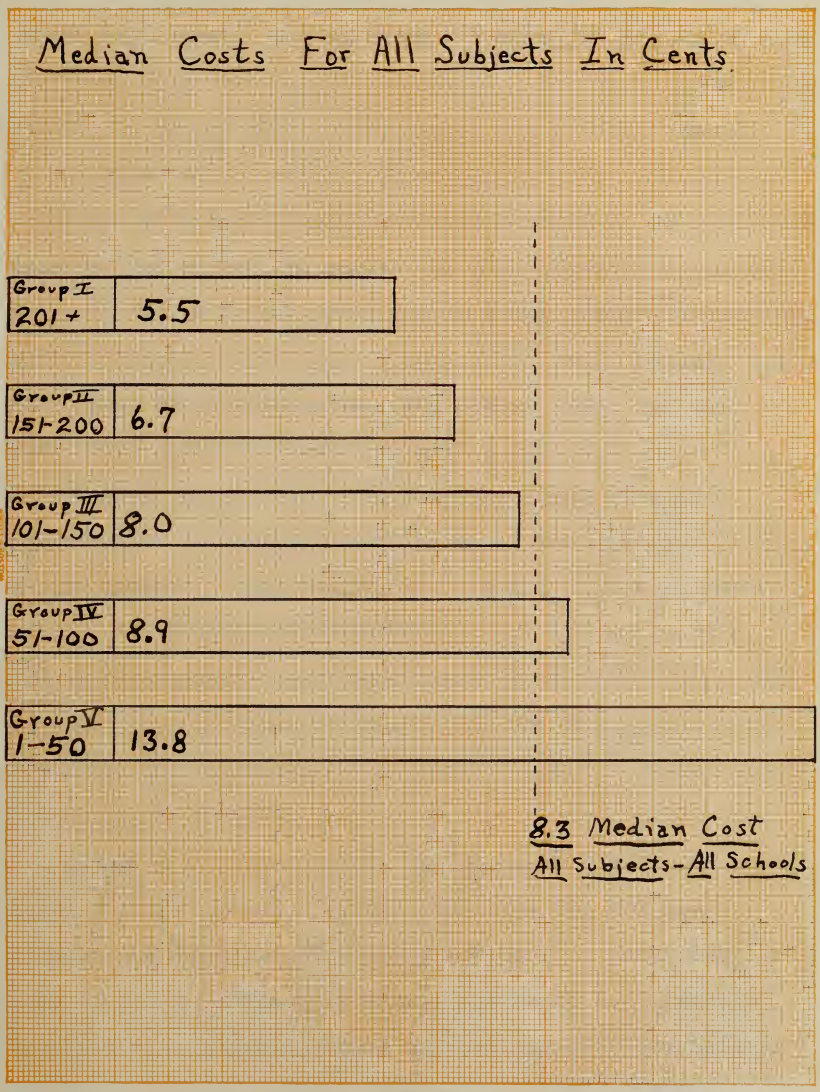
The costs in each school were arranged in order of rank and the median cost was selected. It was felt that this median cost would represent the efficiency of the organization of that school. The median costs of each school in the group were then arranged in order of rank and the low median cost, the median median cost, and the high median cost for each group were obtained.

There may be some who would prefer to use some figure other than the median cost as a measure of the efficiency of the organization of a school, but the writer could not find any other figure that seemed to serve his purpose so well. Kimball, in his study of the Connecticut High Schools, apparently came to the same conclusion, for he made use of the median costs as a measure of the efficiency of the school organization.

TABLE 1V
MEDIAN COSTS IN CENTS FOR ALL SUBJECTS

	GROUP	HIGH	MEDIAN	LOW
1	201+	6.3	5.5	4.5
11	151-200	10.2	6.7	5.4
111	101-150	11.6	8.0	5.3
1V	51-100	18.0	8.9	5.8
V	1-50	21.7	13.8	10.2

GRAPH VIII


Median Costs For All Subjects In Cents
Group I
201+
5.5
Group II
151-200
6.7
Group III
101-150
8.0
Group IV
51-100
8.9
Group V
1-50
13.8
8.3 Median Cost
All Subjects - All Schools

In Group 1 we find that the median costs reported are quite consistent, varying from 4.5 cents to 6.3 cents. In Group 11 there is a greater variance, from 5.4 cents to 10.2 cents. In Group 111 the variation is about the same as that for Group 11, namely, from 5.3 cents to 11.6 cents. However, in Group 1V we note a wide variation, in this case from 5.8 cents to 18.0 cents. No satisfactory explanation for such a great difference can be given without a thorough study of local conditions. Group V, as would be expected, also shows wide divergence. The median costs for this group vary from 10.2 cents to 21.7 cents.

Let us examine this table in the light of such a criterion as the median cost of all of the subjects in all of the schools. This median cost of all of the subjects in all of the schools was found to be 8.3 cents. Group 1V's median median cost of 8.9 cents is slightly above and the median median cost of 13.8 cents for Group V, considerably above our median of 8.3 cents for all of the subjects in all of the schools.

Going into detail, now, and trying to point out the causes for the variance between the high and low median costs of the various groups, the writer will pass over Group 1, for two reasons. First, our study is primarily concerned with schools having an enrollment of two hundred pupils or less, and second, the median costs of Group 1

are so consistent that little information of value would be gained by such critical analysis.

Therefore, in Group 11 the school reporting a median cost of 5.4 cents has 26 pupils per teacher, the highest ratio of pupils to teachers of any school in Group 11. This same school maintains only one class of 1-5 pupils and five classes of 6-10 pupils. The teachers were carrying a median teaching load of 595 pupil-hours, which is 120 more than the median teaching load for all of the teachers in all of the schools reporting, and 105 more than the median teaching load of teachers in their group. The median salary of the teachers in this school is $1250, which is $150 less than the median salary for all of the teachers in all of the schools reporting.

The low median cost of this school, no doubt, is due to the small number of uneconomical classes, the low salary of the teachers, a reasonable teaching load, and the high ratio of pupils to teachers. Possibly they do not pay their teachers enough nor employ as many teachers as they should. No teacher in the school receives as much as $1600, the median salary of the teachers in schools of similar size, also the salary of the principal is the lowest of any principal in his group.

Examining the school in the same group reporting a median cost of 10.2 cents, the highest in the group, by the same criteria we note that the ratio of pupils to

teachers is 16, the lowest of any school in the group. It maintains only one class of 1-5 pupils, the same as the school with the lowest median cost, but maintains eleven classes of 6-10 pupils, or a total of twelve uneconomical classes as opposed to six for the school with the low median cost. The median teaching load of the teachers is 498 pupil-hours,(8 more than the median teaching load for the group and 23 more than the median teaching load for all of the teachers in all of the schools), which is 97 less than the school with the low median cost. The median salary paid to the teachers in this school is $1900, which is $300 above the median salary of the teachers in the group, $500 above the median salary for all of the teachers in all of the schools, and $650 above the median salary of the teachers in the school reporting the low median cost of 5.4 cents. The salary for the principal is likewise above the median salary of the principals in his group, in fact, it is the highest salary paid any principal in the group.

The high median cost of this school in comparison with the low median cost in the former school, as measured by the four criteria(pupil-teacher ratio, number of uneconomical classes, teaching load, and salaries paid to teachers and principals), is due to the lower pupil-teacher ratio, larger number of uneconomical

classes, lower teaching load, and higher salaries.

Let us consider one more case before passing on, namely, the schools of Group 111, enrolling 101-150 pupils. The school reporting a median cost of 5.3 cents, the lowest in the group, has a pupil-teacher ratio of 16 which is also the lowest for this group of schools. There are three classes of 1-5 pupils and six classes of 6-10 pupils, a total of nine uneconomical classes. The median teaching load in this school is 364 pupil-hours per week. However, as this teacher is teaching subjects which meet but four days per week it is only fair to translate this figure into one based on classes meeting five days per week. Making this computation we secure a figure of 455 pupil-hours per week, which is 30 more than the median teaching load for the group. The median salary of the teachers is $1300, $200 below the median salary of the teachers in the group and $100 below the median salary of all of the teachers in all of the schools in all of the groups. The salary of the principal is $400 above the median salary of the principals in his group.

The low median cost in this school is a little misleading. It has the lowest pupil-teacher ratio which would lead us to expect a higher cost. This, however, is offset by the fact that most of its classes meet four days and a few five days per week. As a consequence of

this fact, classes meeting but four days per week, the teaching load of the teachers is low and would also point toward a higher cost. The salaries of the teachers are low, decidedly low, and tend to hold the costs down. This school is but one example of the lack of uniform practice to be found in our high schools.

Considering the school reporting a median cost of 11.7 cents, the highest in the group, we find that the ratio of pupils to teachers is 19, one less than the median pupil-teacher ratio of the group and three more than the school with the lowest median cost in the group. This school with the median cost of 11.7 cents maintains four classes of 1-5 pupils, and four classes of 6-10 pupils, a total of eight uneconomical classes, which is one less than the number found in the school with the low median cost of 5.3 cents. It is evident that the increased cost is not due to this factor. Let us look further. The median teaching load in this school is 338 pupil-hours per week, 26 less than the school with the median cost of 5.3 cents, 87 less than the median teaching load for the group, and 137 less than the median teaching load for all of the teachers in all of the schools. The median salary of the teachers in this school is $1550, $250 more than the median salary of the teachers in the school with the

median cost of 5.3 cents, $50 more than the median salary for all of the teachers in all of the schools. The principal's salary in this school cannot be compared with the salaries of the principals in his group as he reports only that part pro-rated to his time spent in the high school.

It is quite clear then that in the case of this school the reason for the increased cost is to be found in the lower teaching load and higher salaries paid to the teachers. It is also evident that the real cause for the varying costs of instruction is to be found hidden in these four factors enumerated above, and that any one or more of them may throw our costs out of line with the median pupil-hour cost of schools belonging to the same group or with the median pupil-hour cost of all of the schools irrespective of group classification.

These findings are in accord with those of Kimball in his study of the Connecticut High Schools made in 1923. For example, he found that for the schools having an enrollment of between 100-199, corresponding to the schools in our Groups II and III, that the lowest median cost was 4.6 cents and the highest 10.0. The lowest median cost in our Groups II and III is 5.3 cents and the highest 11.6 cents. His median salary paid to teachers is $1425 and ours around $1400. He reports a median teaching load of 468 pupil-hours per week and we find a median teaching load of approximately 455-460. The median ratio

of pupils to teachers in his study was 20 and in our study is around 21-22. And lastly, he notes that these schools of 100-199 pupils maintain 21.9% of their classes for less than 10 pupils, while in our study we find the percentage to be somewhat in excess of 30%. We might note here that we included classes of 10 pupils and less while in his computations he counted only those having less than 10 pupils. This would account for a small part of the difference between his results and ours.

MEDIAN COSTS IN CENTS FOR TEACHING BY DEPARTMENTS

It is quite evident, and to be expected, that pupil-hour costs will increase during each of the four years of the high school as the number of pupils in the classes grow smaller. With this in mind Table V, which follows was prepared.

TABLE V [1]

Median costs in cents for teaching by departments

	1st year					2nd year				
Group	I	II	III	IV	V	I	II	III	IV	V
English	4.7	3.7	5.0	5.5	7.9	5.2	5.0	5.8	7.4	9.0
Latin	5.6	8.1	3.9	10.2	18.5	5.7	9.9	15.6	20.1	21.7
French	5.4	---	4.4	---	---	5.9	4.8	6.7	6.2	10.7
Math	4.8	5.9	7.9	8.4	12.9	5.1	8.7	13.4	17.4	25.0
Science	3.8	6.3	5.6	5.5	10.8	4.2	7.8	6.8	7.0	12.6
History	3.8	5.0	4.2	4.7	7.5	4.3	6.8	4.8	6.3	9.6
Com'l	4.8	3.5	5.0	5.4	12.7	6.0	5.5	7.7	11.2	16.2
Musc'l	6.3	17.6	16.7	15.5	---	7.6	11.7	22.4	15.5	25.0

1 See Page 60

TABLE V (CONT.)

Median costs in cents for teaching by departments

	3rd year					4th year				
Group	I	II	III	IV	V	I	II	III	IV	V
English	4.1	6.6	5.4	7.3	8.3	5.4	6.2	6.7	6.9	8.3
Latin	11.3	13.3	22.2	20.0	20.0	11.3	14.0	20.1	22.7	26.1
French	6.0	7.8	7.8	11.2	16.7	10.5	9.5	18.1	20.2	29.1
Math.	7.6	11.6	13.0	19.1	24.7	13.1	11.4	14.1	26.0	58.3
Science	8.7	11.1	15.8	19.1	22.0	10.7	11.1	15.4	19.1	22.9
History	3.8	7.6	5.2	5.9	11.5	5.0	6.8	6.6	6.0	11.9
Com'l.	9.5	9.1	8.6	14.6	23.8	11.5	15.3	16.7	19.4	21.5
Miscl.	9.1	30.9	12.1	25.3	25.0	5.7	39.6	12.1	25.3	22.1

From inspection of Table V above, this tendency of the pupil-hour cost to increase during the four years is well pronounced. Also the tendency for subjects offered in the same years by the five groups of schools to increase in cost as the schools decrease in size is quite definite. These tendencies are particularly true in the case of Latin, French, Mathematics, Science, Commercial, and Miscellaneous subjects. Under Miscellaneous are included such subjects as Spanish, Manual Training, Cooking, Sewing, Printing, and Mechanical Drawing, all of which are offered rather infrequently.

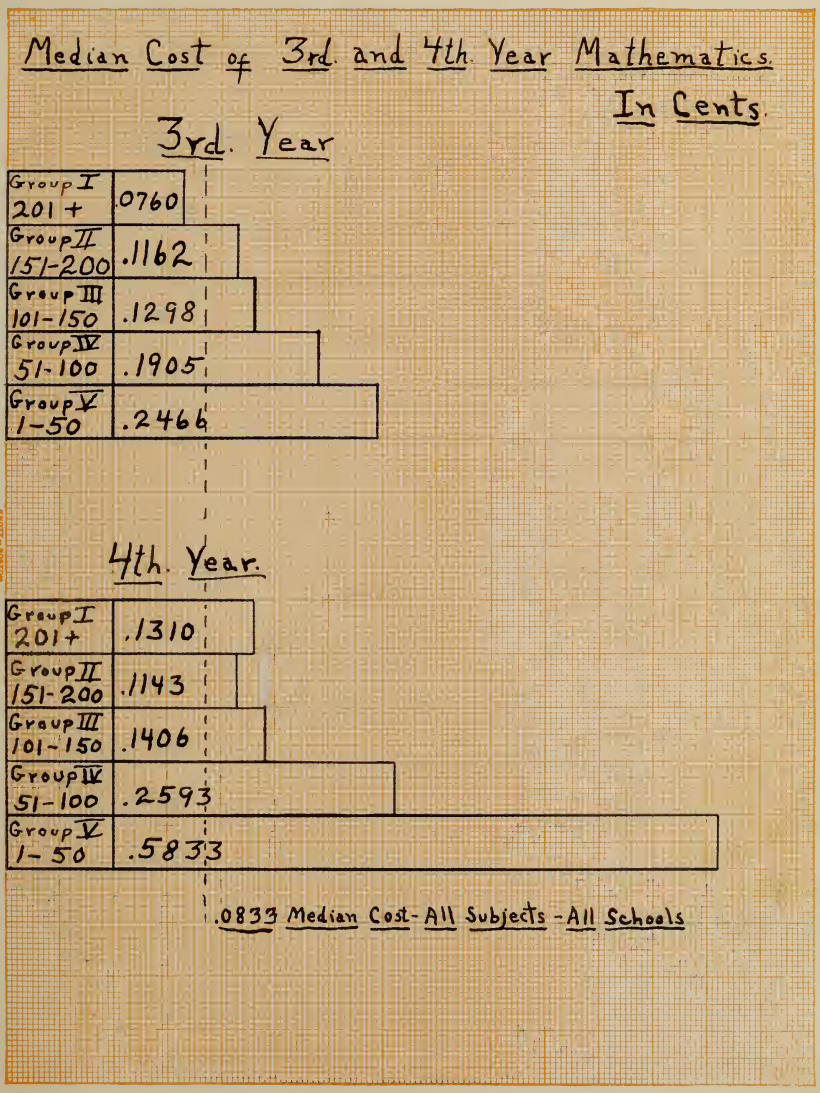
Taking into account the tendencies mentioned above, it is to be questioned whether the smaller schools are justified in offering subjects in such little demand. The reason for these offerings, no doubt, is the insistence by the communities that the high school shall prepare for entrance to the exclusive Eastern Colleges, as mentioned previously.

Reference to Graphs numbered IX to XI, inclusive, present these tendencies in a manner easily grasped, and suggest the possibility of re-organizing our high schools in a more efficient manner. The problem raised here is one of educating the communities to see that there are many good colleges willing to accept our better students, who do not demand the traditional and restricted preparation of the more exclusive ones, and further that there are degrees other than the Bachelor of Arts which signify just as fully that the recipient is the graduate of a four year college course and has been exposed to an equivalent amount of so-called "culture". In addition, the recipient of a degree other than the Bachelor of Arts may be better prepared to meet the problems of life and wrest a living from an apparently critical and reluctant world.

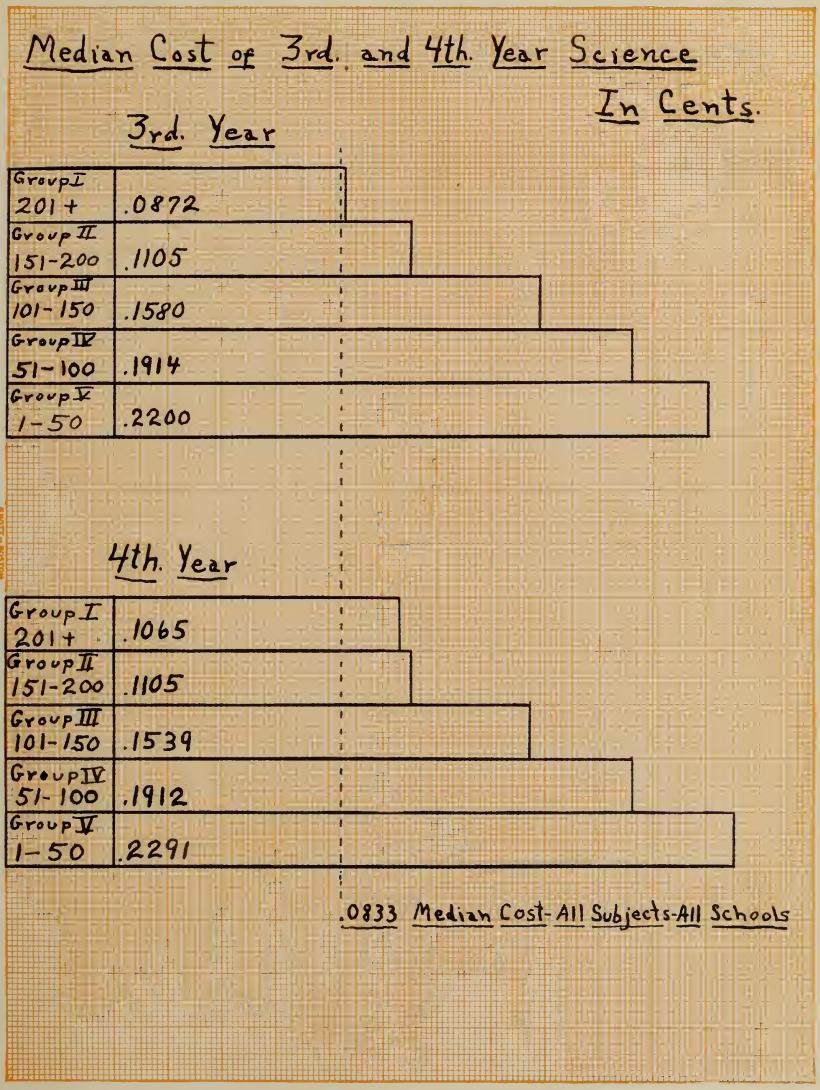
In support of the statement that there are good colleges willing to accept our graduates who have not had the traditional course consisting of four years of Latin, three of French, three or four of Mathematics, etc., the writer offers the following information gleaned from the Bulletin of the Newton Massachusetts High School.

The following colleges will admit students who have had three years of Mathematics, two of any language, a year of History, and either Physics or Chemistry, as candidates for the degree designated: Bates, B.S.; Bowdoin,

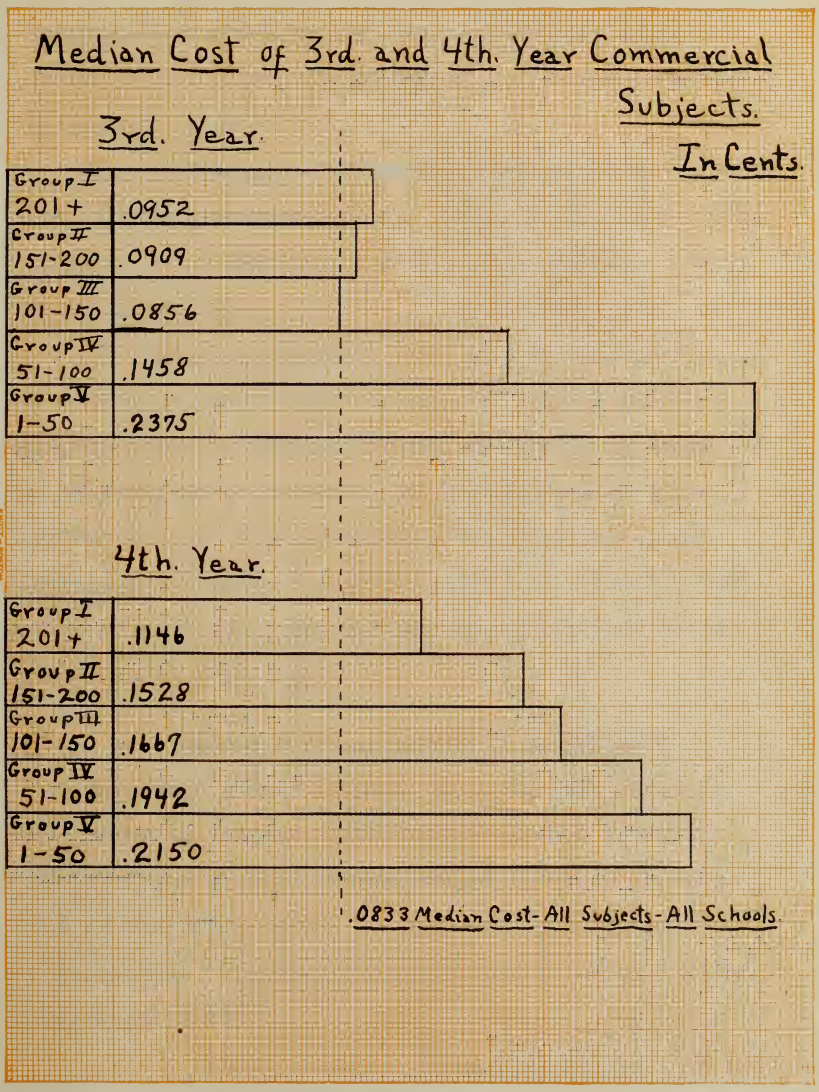
GRAPH IX


Median Cost of 3rd. and 4th. Year Mathematics.
In Cents.
3rd. Year
Group I 201 +
.0760
Group II 151-200
.1162
Group III 101-150
.1298
Group IV 51-100
.1905
Group V 1-50
.2466
4th. Year.
Group I 201 +
.1310
Group II 151-200
.1143
Group III 101-150
.1406
Group IV 51-100
.2593
Group V 1-50
.5833
.0833 Median Cost - All Subjects - All Schools

GRAPH X


Median Cost of 3rd. and 4th. Year Science
In Cents.
3rd. Year
Group I 201+ .0872
Group II 151-200 .1105
Group III 101-150 .1580
Group IV 51-100 .1914
Group V 1-50 .2200
4th. Year
Group I 201+ .1065
Group II 151-200 .1105
Group III 101-150 .1539
Group IV 51-100 .1912
Group V 1-50 .2291
.0833 Median Cost-All Subjects-All Schools

GRAPH XI


Median Cost of 3rd. and 4th. Year Commercial Subjects.
In Cents.
3rd. Year.
Group I 201+ .0952
Group II 151-200 .0909
Group III 101-150 .0856
Group IV 51-100 .1458
Group V 1-50 .2375
4th. Year.
Group I 201+ .1146
Group II 151-200 .1528
Group III 101-150 .1667
Group IV 51-100 .1942
Group V 1-50 .2150
.0833 Median Cost-All Subjects-All Schools.

B.S.; Brown, Ph.B., B.S.; Massachusetts Agricultural College, B.S.; Middlebury, B.S.; Skidmore, B.S.; Tufts, B.S.; University of Maine, B.S.; and Vermont University, B.S.

By increasing our language offering to three years the following colleges may be added to the above list: Cornell, B.S.; Dartmouth, A.B., B.S.; Harvard, B.S.; and Simmons, B.S.

The above information, while it is believed to be accurate, is to be taken neither as a guide in the preparation of students for any particular college, nor as an exhaustive listing. The information is given here merely as an indication of the possibility of devising a program of studies which will simplify our offerings and still prepare pupils to continue their education in a college.

MEDIAN COSTS IN CENTS BY DEPARTMENTS

The costs given in Table VI below were found in the following manner. All English classes reported in all of the schools were arranged in order and the cost of the middle class in this arrangement placed in the table. The same procedure was followed for the other departments.

TABLE VI

Median Costs in Cents by Departments

English	7.1
Latin	15.6
French	9.8
Mathematics	12.9
Science	10.8
History	5.5
Commercial	10.3
Miscellaneous	15.5

One interesting fact is brought out in this phase of the study. One would naturally expect to find the median cost for English to be the lowest of all departments, since every pupil must take English each year. This, however, is not true in this study. We find that History with a median cost of 5.5 cents is below the median cost of English which falls at 7.1 cents. The writer cannot offer a positive explanation of this apparent discrepancy but from careful study and consideration he suggests this solution. Practically every Freshman and Senior is required to take a history course, and in addition one or more courses are open to Sophomores and Juniors. In these latter courses both Sophomores and Juniors are admitted to the same course, thus tending to keep enrollment up to or in excess of actual Sophomore or Junior enrollment. That is, a school may offer Early European History this year to both Sophomores and Juniors, then next year Modern European History will be offered to both Sophomores and Juniors.

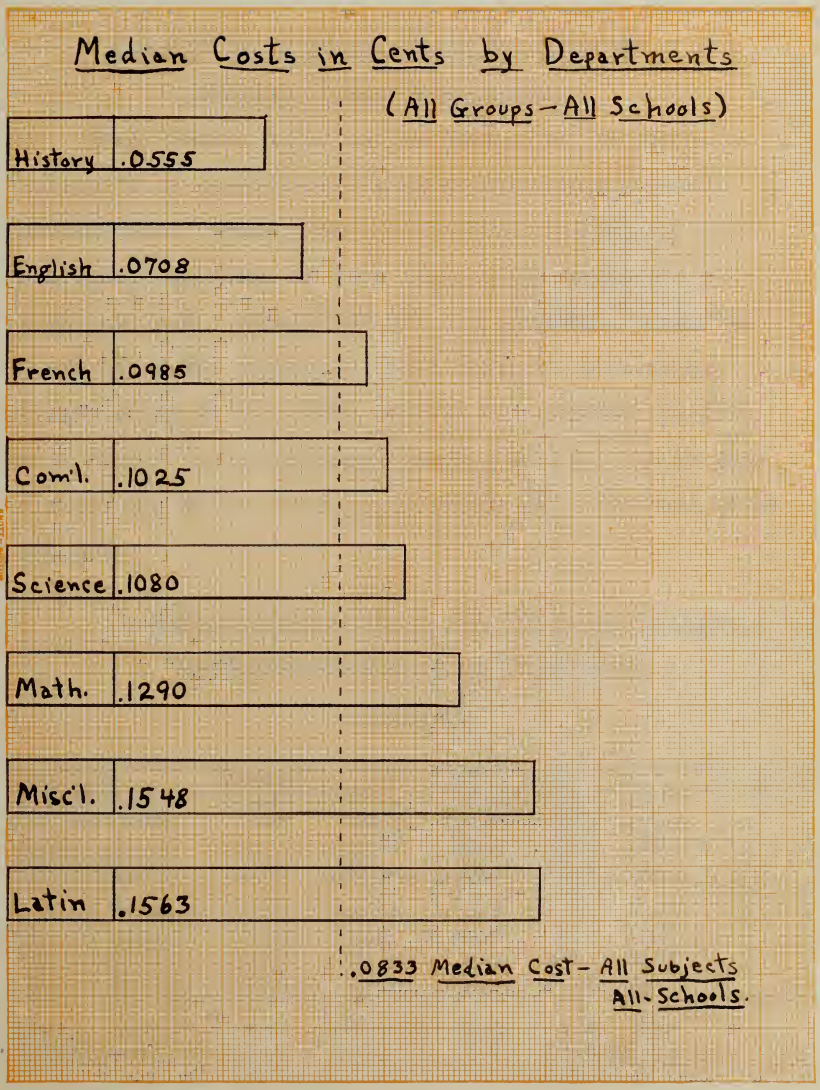
Thus the registration for the three History Courses may be in excess of registration in any three classes of English in the school.

Latin and Miscellaneous subjects show the highest costs. This is due of course to small enrollments and was expected. The smaller the school the fewer there are who register for these subjects. This makes it impossible to maintain a class size at,or any where near, the size of classes in English or History.

In Kimball's study the arrangement is somewhat different. His study ranks the departments in the following order: English, Commercial, History, Science, Mathematics, Foreign Languages, and Miscellaneous. Our arrangement is shown in Graph Number Xll.

The median cost of all of the subjects in all of the schools was found to be 8.3 cents. This agrees fairly well with the state median of 7.6 cents reported by Kimball. In his study, Kimball had reports from every school in the state, and some of them enrolled more than 650 pupils. Thus the low costs in the larger schools would more than offset the higher costs in the smaller. This would also account somewhat for the different ranking of the departments in his study. A large school is able to schedule one or more large classes in some of the subjects which are not in universal demand while the small school is unable to

GRAPH XII


Median Costs in Cents by Departments
(All Groups - All Schools)
History .0555
English .0708
French .0985
Com'l. .1025
Science .1080
Math. .1290
Misc'l. .1548
Latin .1563
.0833 Median Cost - All Subjects
All Schools.

escape the small registration, if offered at all.

Comparison of Median Costs for Various Subjects in all High Schools

Graph Number X111 gives a more detailed study of the costs of individual subjects and requires little explanation. Penmanship and Spelling, having the lowest cost, was found to be a class of 72 meeting five days per week. Such class size is abnormal, hence the position of the subject in this graph is misleading. Trigonometry at the other extreme is a typical example of a subject in little demand being kept in the program through the effort to prepare pupils for a few exclusive colleges.

Median Costs in Cents for Teaching Foreign Languages in Each Group of Schools.

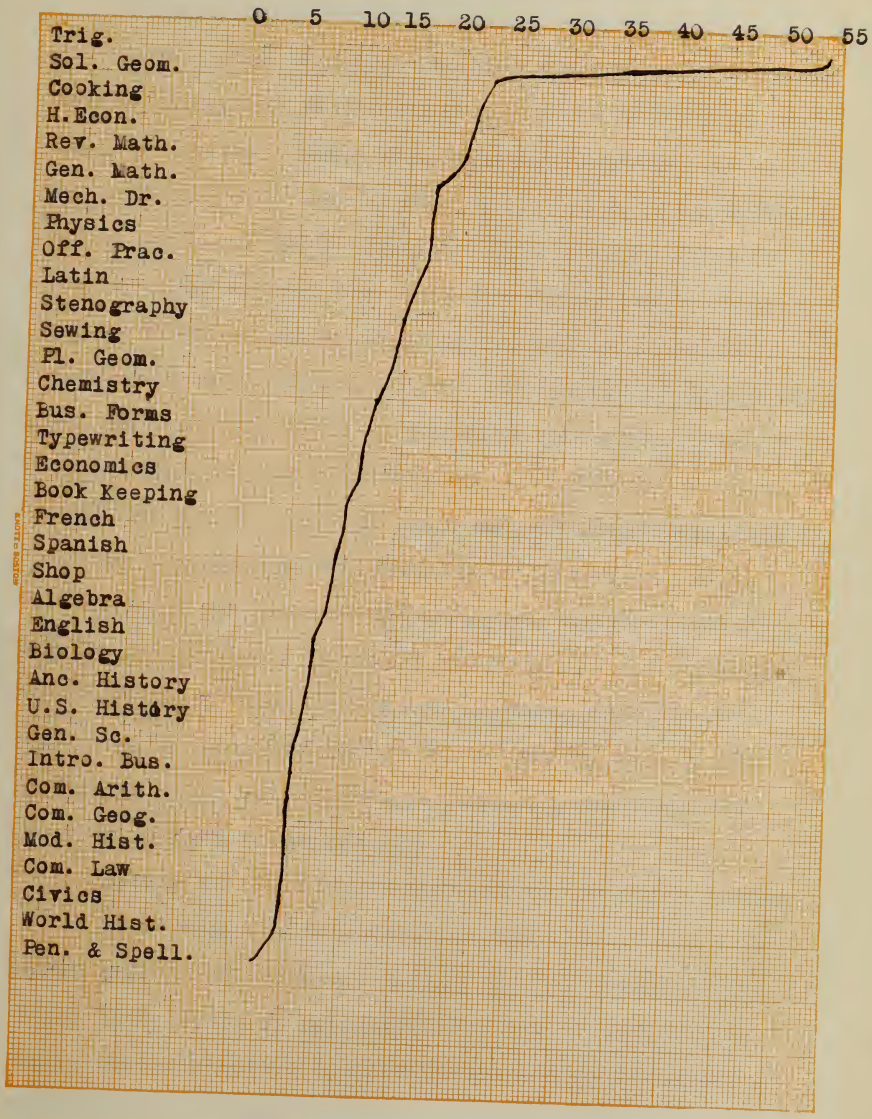
TABLE V11

Subject	Group 1	11	111	1V	V
1st.yr.Latin	5.6	8.1	3.9	10.2	18.5
2nd.yr.Latin	5.7	9.9	15.6	20.1	21.7
3rd.yr.Latin	11.3	13.3	22.2	20.0	20.0
4th.yr.Latin	11.3	14.0	20.8	22.7	26.2
1st.yr.French	5.4	----	4.4	----	----
2nd.yr.French	5.9	4.8	6.7	6.2	10.7
3rd.yr.French	6.0	7.8	7.8	11.2	16.7
4th.yr.French	10.5	9.5	18.0	20.2	29.2
1st.yr.Spanish	----	----	5.4	8.9	----
2nd.yr.Spanish	----	----	7.7	10.2	----

GRAPH XIII

MEDIAN COSTS IN CENTS BY SUBJECTS

ALL SCHOOLS-ALL GROUPS



Keeping in mind that the median cost for all subjects is 8.3 cents, we may well question the wisdom of teaching foreign languages in the upper years, especially in the smaller schools. Latin can probably be carried through the four years of the larger schools, such as in Groups 1 and 11, without undue expense. This is also true of French. The cost of the third and fourth years of Latin begins to be expensive in Group 111 and it is to be questioned as to whether or not the schools of Groups 111, 1V, and V are justified in offering this work. Many of these schools attempt to keep the cost down by combining third and fourth years of Latin and offering Virgil one year to both Juniors and Seniors and Cicero the next, but in spite of this the costs mount. A third year of French begins to be expensive in Group 111 and continues to increase in Groups 1V and V. Spanish does not require much consideration for it is offered by only one school in Group 111 and one in Group 1V, and then for reasons unknown to the writer.

In view of these high costs, if for no other reason, it might be well for schools in Groups 111, 1V and V to offer but one language and in the case of Groups 1V and V but three years or possibly two years of that language. The prohibitive costs of third and fourth year Latin and third year French are quite forcibly presented

in Graphs XlV and XV.

Practices Noted in Certain Schools

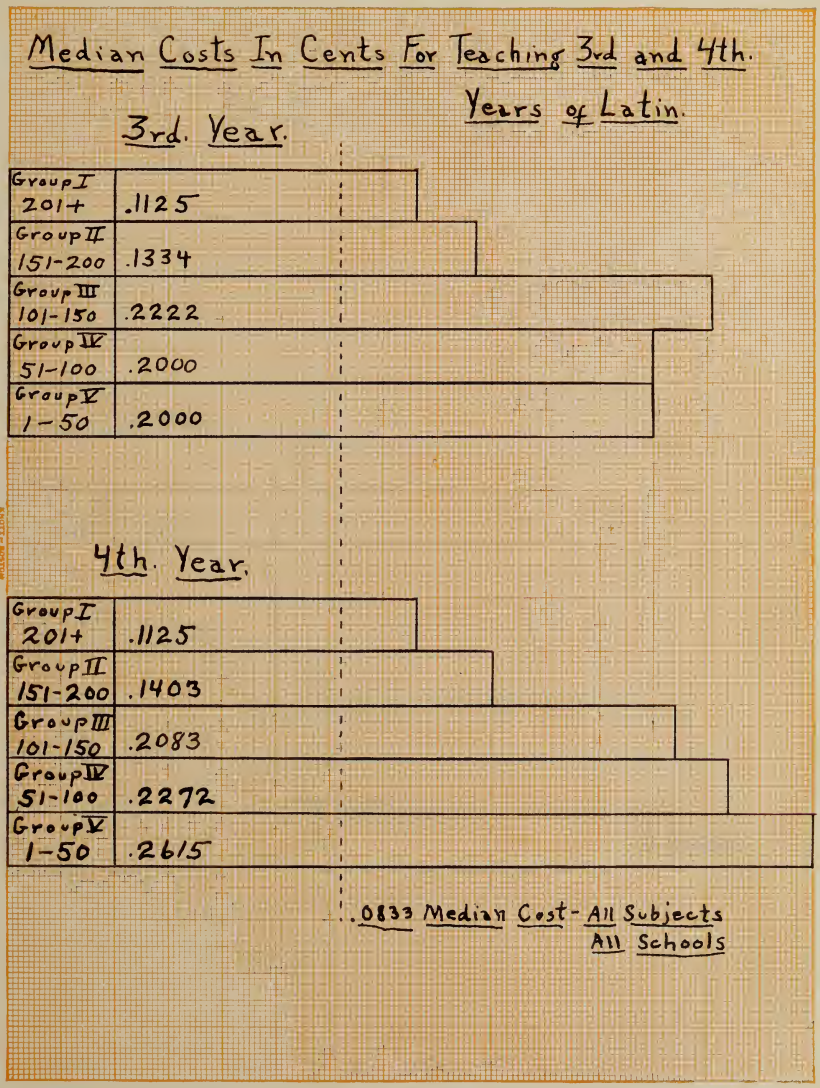
This problem of instruction costs has received some attention in the past and educators have tried to reduce the number of small classes in certain subjects by allowing students of two or more grades to elect these subjects. In the very small schools, even when this device has been resorted to, it has been impossible to offer some subjects. We do find, however, that the traditional college preparatory subjects have been retained and this has resulted in the many small classes noted above.

In order to see just how much effort has been made to reduce the number of small classes the following summary of current practices is given below.

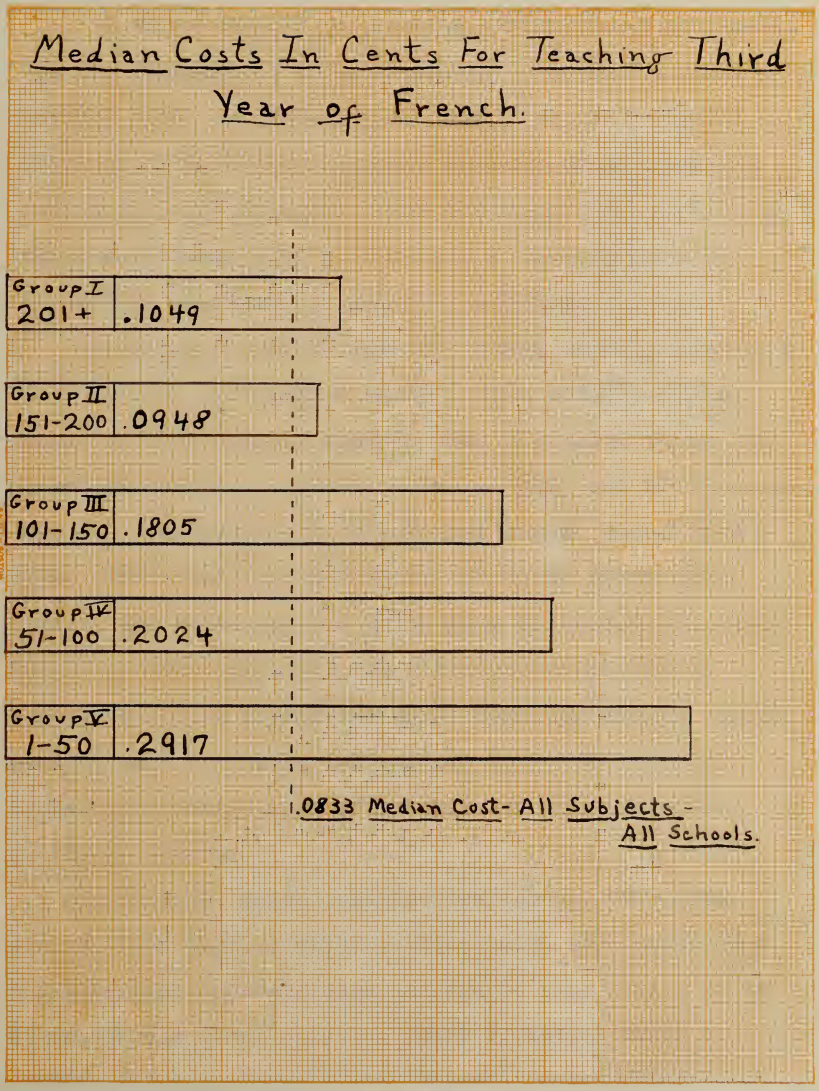
In Group 1, which contains five schools having an enrollment of two hundred or more pupils, three schools combine third and fourth year Latin; two combine third and fourth year Science; two combine third and fourth year Mathematics; one combines third and fourth year French; and one offers American History to third and fourth year pupils.

In Group 11, which contains five schools enrolling one hundred fifty-one to two hundred pupils, four schools combine third and fourth year Latin; three combine third and fourth year Science; and one offers American History

GRAPH XIV


Median Costs In Cents For Teaching 3rd and 4th. Years of Latin.
3rd. Year.
Group I 201+ .1125
Group II 151-200 .1334
Group III 101-150 .2222
Group IV 51-100 .2000
Group V 1-50 .2000
4th. Year.
Group I 201+ .1125
Group II 151-200 .1403
Group III 101-150 .2083
Group IV 51-100 .2272
Group V 1-50 .2615
.0833 Median Cost - All Subjects All Schools

GRAPH XV


Median Costs In Cents For Teaching Third Year of French.
Group I 201+ .1049
Group II 151-200 .0948
Group III 101-150 .1805
Group IV 51-100 .2024
Group V 1-50 .2917
.0833 Median Cost- All Subjects - All Schools.

to third and fourth year pupils.

In Group 111, which contains sixteen schools enrolling one hundred one to one hundred fifty pupils, twelve combine third and fourth year Latin; thirteen combine third and fourth year Science; eight combine third and fourth year Mathematics; three offer American History to third and fourth year pupils; and a few schools offer scattering combinations in other subjects.

In Group 1V, which contains twenty schools enrolling fifty-one to one hundred pupils, three schools combine third and fourth year English; twelve combine third and fourth year Latin; eighteen combine third and fourth year Science; ten combine third and fourth year Mathematics; seven offer American History to third and fourth year pupils; and other schools offer many scattering combinations in other subjects. In addition to this three schools offer no commercial work, some may offer a single course, such as Commercial Arithmetic or one year of Bookkeeping, and others offer only two years each of Latin and French.

In Group V, which contains ten schools enrolling one to fifty pupils, seven combine third and fourth year English; four combine third and fourth year Latin, while other schools offer only two years of Latin; seven combine third and fourth year Science; seven offer American History to third and fourth year pupils; one

combines second and third year Latin; one combines first and second year English; and other schools offer many scattering combinations. Two schools offer no commercial subjects and the remaining ones offer only one or two courses in that field.

From the above it is clearly seen that some conscious effort has been made to reduce the number of uneconomical classes either by allowing two or more classes to elect a certain year of work in a field and then alternating the following year with the subsequent course and allowing pupils from the same two years to elect the offering of that year, or by dropping some subjects from the program of studies altogether.

The writer feels that the suggested procedure of the following section offers a better solution of this problem and yet enriches the curricular offerings of the very small school.

Recommendations

The writer hopes that he may be able to suggest a curriculum for the small high school that will be more satisfactory than the ones now to be found. In proposing this curriculum he has in mind a high school enrolling about forty pupils and employing three teachers.

From an analysis of the ten high schools in Group V reporting in this study, it was found that the median sized school enrolled thirty-nine pupils and employed

three teachers. Therefore, this typical sized school was selected as the one for which a four year curriculum should be proposed. The suggestion of adopting an alternating program, as advocated by certain educators was followed. The following schedule is the result of this suggestion.

TABLE V111
1928-1929
1930-1931,etc.

PERIOD	TEACHER A (PRIN.)	TEACHER B	TEACHER C
1		Gen.Math.(1,2)	Mod.Eur.Hist.(3,4)
2		Algebra (3,4)	Civics (1,2)
3	Physics (3,4)	English 1 (1,2)	Bk.kp. I&11 (3,4)
4	Lab. 2 days(3,4)		
5		Latin 1 (2,3)	Type.I & 11 (1,2)
6	Gen.Sc. (1,2)	Eng.III (3,4)	
7	Agric.I&II (1,2)		Sew.I&II (1,2)

TABLE IX
1929-1930
1931-1932,etc.

PERIOD	TEACHER A (PRIN.)	TEACHER B	TEACHER C
1			U.S.Hist.(3,4)
2		Geom.(3,4)	Ear.Eur.Hist.(1,2)
3	Chemistry (3,4)	Eng.II (1,2)	Bk'kp.II&I (3,4)
4	Lab.2 days (3,4)		
5		Latin II (3,4)	Type.II&I (1,2)
6	Biol.(1,2)	Eng. IV (3,4)	
7	Agric. II&I (1,2)		Sew. II&I (1,2)

In the two schedules given above, you will note that the principal is required to teach only three subjects each year. This will leave him sufficient time for some supervision of the instruction in his building. The two years of work in Agriculture are carried on at the same time in the same class. This should be possible, in-as-

much as the course in mind would consist largely of individual projects. The same is true of the courses in Sewing, Typewriting, and Bookkeeping.

Let us analyze these proposed schedules and note the possibilities of election in each of the four grades, IX to XII, for each year. Every effort has been made to enrich the work of Grades IX and X, for the writer feels strongly that the heaviest mortality occurs during these two years, and that the survivors are a highly selected group for whom a somewhat more restricted offering may be reasonably adequate.

TABLE X[1]
1928-1929
1930-1931, etc.

GRADE IX	GRADE X	GRADE XI	GRADE XII
English I	English I	English III	English III
Civics	Civics	Mod. Eur. Hist.	Mod. Eur. Hist.
Gen. Math.	Gen. Math.	Algebra	Algebra
Gen. Science	Gen. Science	Physics	Physics
	Latin I	Latin I	
Agric. I	Agric. II	Bk'kp. I	Bk'kp. II
Sewing I	Sewing II		
Type. I	Type. II		

Note: Subjects listed above the break in the table are acceptable for entrance by many colleges.

1 See Page 59

TABLE XI

1929-1930
1931-1932, etc.

GRADE IX	GRADE X	GRADE XI	GRADE XII
English II	English II	English IV	English IV
Ear.Eur.Hist.	Ear.Eur.Hist.	U.S.Hist.	U.S.Hist.
Biology	Biology	Chemistry	Chemistry
		Geom.	Geom.
		Latin II	Latin II
Agric. I	Agric.II	Bk'kp. I	Bk'kp.II
Sewing I	Sewing II		
Type. I	Type.II		

Note: Subjects listed above the break in the table are acceptable for entrance by many colleges.

The writer is perfectly willing to admit that there may be weaknesses in the above curricular offerings. Nevertheless, he does feel that such offerings are an improvement over many in actual use. He would call attention, particularly to the enriched offerings for Grades IX and X. Opportunity must be provided in a three teacher school for the few who will desire to continue their education beyond the secondary school. This has been provided for. However, it must be borne in mind that the curriculum here provided will not prepare for certain exclusive institutions of higher learning. For those pupils who are determined to enter such institutions there are two roads open: First, complete two years of work in this school and then transfer to some nearby larger high school which offers the necessary preparation; second, complete four years of

work in this school and then enroll in some good preparatory school for one or two years of intensive work, depending upon the mentality and physical strength of the pupil concerned.

Let us now compare this proposed program of studies with those offered by the smallest, the median sized school, and the school just below the median, included in Group V of this study. This group includes those schools enrolling 1-50 pupils.

TABLE XII

PROPOSED	MEDIAN	JUST BELOW MEDIAN	SMALLEST
3 Teachers	3 Teachers	3 1/2 Teachers	3 Teachers
40 Pupils (approximate)	40 Pupils	39 Pupils	28 Pupils
	SUBJECTS OFFERED		
Eng. 1,2,3,4	Eng.1,2,3,4	Eng.1,2,3,4	Eng.1,2,3,4
Latin 1,2	Lat.1,2,3,4	Lat.1,2,3,4	Lat.1,2,3,4
- - - - - -	French 1,2,3	French 1,2,3	French 1,2,3
Gen.Math.	- - - - - -	- - - - - -	- - - - - -
Algebra	Algebra	Algebra	Algebra
Plane Geom.	Plane Geom.	Plane Geom.	Plane Geom.
- - - - - -	- - - - - -	Rev. Math.	Rev. Math.
Gen. Science	- - - - - -	- - - - - -	Gen.Science
Biology	Biology	- - - - - -	Biology
Physics	Physics	Physics	Physics
Chem.	Chem.	Chem.	Chem.
Civics	- - - - - -	Civics	- - - - - -
Ear.Eur.Hist.	Anc.Hist.	Anc.Hist.	Anc.Hist.
Mod.Eur.Hist.	Mod.Hist.	Eur.Hist.	Eur.Hist.
U.S.Hist.	U.S.Hist.	U.S.Hist.	U.S.Hist.
Bk'kpg.I&II	- - - - - -	Bk'kpg.	- - - - - -
Type. I&II	- - - - - -	Type.	- - - - - -
- - - - - -	- - - - - -	Stenog.	- - - - - -
Sew. I&II	- - - - - -	Sew.	- - - - - -
- - - - - -	- - - - - -	Cooking	- - - - - -
Agric. I&II	- - - - - -	- - - - - -	- - - - - -

The writer would call attention to some interesting facts brought out in Table XII. Our proposed school offers but two years of Latin while the three schools now in operation offer four years in this field. We feel that two years of Latin will meet the needs of practically all pupils who may attend this small rural high school; at any rate, it is sufficient to admit them to a college. When the third and fourth years of Latin are offered in a school of this size it inevitably results in another small class and the possible elimination of a subject which will probably appeal to a greater number of pupils. For similar reasons we have not offered any work in French.

We have introduced a course in general Mathematics, which together with Algebra and Geometry will meet the requirement of two and a half years of Mathematics as set up by many colleges. This obviates the necessity of offering a course in Review Mathematics. Many first year pupils do not elect Algebra, and perhaps they are wise to do so, but we hope that practically all of them could be persuaded to take this course in General Mathematics.

Four years of work are offered in the fields of Science and the Social Studies. This is not true of two of the three schools listed here. Finally, we offer courses in the fundamentals of Typewriting, Book-

keeping, Practical Sewing, and Scientific Agriculture. The three schools, whose offerings are shown here, have no course in Agriculture, and two of them offer no work in Typewriting, Bookkeeping and Sewing.

The above mentioned facts, I believe, will bear out my contention that the proposed program of studies will come nearer meeting the needs of the pupils enrolled in the small high school. The three programs now in use tend to follow the traditional college preparatory curriculum to the detriment of the interests of pupils not contemplating college entrance.

CONCLUSIONS

1. This study was carried out on a questionnaire basis and as such is subject to the usual errors incident thereto; however, it does show well defined tendencies.

2. The Principal is a teacher, the head teacher, receiving additional compensation for assuming the legal responsibilities accompaning the position. In the smallest schools he has no time for supervision, even if he had the desire or qualifications to supervise the work of instruction.

3. The teaching load of the teachers in very few cases approaches the recommended load of 625 pupil hours per week and the smaller the school the smaller the median teaching load.

4. The salaries paid to teachers and principals do not depend upon the size of the school as much as they do upon the evident desire of a community to retain a good principal or teacher.

5. The four factors controlling instruction costs are: ratio of pupils to teachers; salaries of the teachers; teaching load of teachers; and size of class. Of these, class size has the most weight and is the one which offers the greatest opportunity to reduce instruction costs.

6. Defining an uneconomical class as one of ten or less pupils, we note that the percentage of such classes

varies from 10.9% in Group 1 to 63.5% in Group V.

7. The most apparent reason for these uneconomical classes seems to be the desire of each community, regardless of size to prepare its high school graduates for entrance to the exclusive Eastern Colleges.

8. No four year high school should be maintained for less than fifty pupils. Possibly, it would be wiser to maintain no four year High School for less than one hundred pupils.

9. Those communities now maintaining a four year high school for less than fifty pupils should consolidate with one or more nearby high schools. Failing in this, they should reorganize as a four year Junior High School comprising Grades VII to X. Pupils qualified to continue into the work of Grades XI and XII can be sent to some four year high school nearby.

10. Those communities unwilling to give up their four year Senior High School of less than fifty pupils or consolidate with other small schools nearby, can enrich the curricular offerings of their school and possibly reduce instruction costs by reorganizing on the basis of an alternating program. Under this plan the work of years I and III is offered one year, and years II and IV the next, and then beginning over again with years I and III. This groups pupils of year I and II together, also pupils of year III and IV, permitting a larger class size and lower pupil-hour costs of instruction.

APPENDIX

Principals of the high schools located in the following towns cooperated in this study.

Ashby	Norton
Ashland	Pembroke
Avon	Petersham
Billerica	Plainville
Brookfield	Provincetown
Charlemont	Rockport
Charlton	Rutland
Chelmsford	Scituate
Deerfield	Sharon
Douglas	Sheffield
Duxbury	Southborough
Essex	Spencer
Gilbertville	Sudbury
Groton	Tisbury
Hanover	Topsfield
Hatfield	Upton
Holden	Uxbridge
Holliston	Ware
Hopedale	Warren
Hopkinton	Wayland
Huntington	West Boylston
Lancaster	West Bridgewater

Leicester
Medway
Mendon
Millbury
Nantucket
Northfield
West Newbury
Westboro
Westford
Westminister
Williamsburg
Winchendon

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PERCENTAGE OF CLASSES UNDER EACH SIZE

Schools	1-5	6-10	11-15	16-20	21-25	26 & over
1-49	36.9	36.0	16.8	5.6	2.9	1.7
50-99	17.6	25.8	21.0	17.9	8.9	8.8
100-149	12.8	15.7	14.4	28.3	20.4	8.4
Conn.H.S. 1-100[1]	22.3	28.0	21.2	13.8	5.4	9.3
Mass.H.S.[2] 1-50	27.0	33.0	25.0	10.0	4.0	2.0
51-100	14.0	29.0	23.0	20.0	9.0	4.0

1 Organization and administration of High Schools in the state of Conn., J.B.Davis,1921.

2 Report on High Schools for the year 1917, Mass. Board of Education, Bul. 1918 #5

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A SUGGESTED PROGRAM FOR THE SMALLER HIGH SCHOOL

1st Year	Units	2nd Year	Units
English	1	English	1
Civics	1	Eur. Hist.	1
Mathematics	1	Health Instruction	Partial
Health, Music & Draw.	Partial	Choose three	
General Science	1	Latin or Mod. Foreign Lang.	1
Choose one		Biology	1
Latin or Mod. Foreign Lang.	1	Plane Geom.	1
Etymology	1	Agric. or Home Econ. or Industrial	1/2-2
Agric. or Home Econ. or Industrial	1/2-2	Art of Music	1/2-1
Art or Music	1/2-1	Bookkeeping	1
Junior Bus. Training	1		
3rd Year		**4th Year**	
English	1	English	1
Amer. Hist.	1	Probs. of Democracy	1
Health	Partial	Health	Partial
Choose three		Choose three	
Latin or Mod. Foreign Lang.	1	Latin or Mod. Foreign Lang.	1
Mathematics	1	Mathematics	1
Physics	1	Chemistry	1
Agric. or Home Econ. or Industrial	1/2-2	Agric. or Home Econ. or Industrial	1/2-2
Art or Music	1/2-1	Art or Music	1/2-1

John Rufi -- "The Small High School" -- Columbia University Contributions to Education #236.

PER PUPIL-HOUR COST OF INSTRUCTION

Subject	A	B	C	D	E
English 9	0620	0496	0903	0776	1614
English 10	0723	9937	0736	0685	1614
English 11	0667	0562	1015	3881	- - -
English 12	0620	0562	1354	0952	[illegible]
Algebra	1018	0817	1534	2041	1614
Pl.Geom.	1273	0817	1263	4762	1614
Int.Alg.	1175	----	----	----	----
Sol.Geom.	1389	1984	1984	----	----
Bus.Arith.	----	----	1984	----	----
Latin 1	0723	0496	0738	0776	----
Latin 2	1085	1054	0903	2328	----
Latin 3	0723	4219	0903	1.1643	---
Latin 4	0723	4219	----	----	----
French 1	----	1157	----	1662	----
French 2	----	3472	----	2911	----
Civics	1091	0478	1452	1952	1614
Amer.Hist.	1175	1015	0992	4762	----
Eur.Hist.	1273	0903	----	2041	----
Econ.Civ.	1091	----	----	----	1614
Prob.Democ.	1091	1160	----	----	----
Gen.Science	0941	0478	----	0932	1614
Biology	----	0903	0761	----	1614
Physics	0540	----	1151	----	----
Chem.	----	0534	----	----	----

School	A	54	Pupils
"	B	41	"
"	C	32	"
"	D	26	"
"	E	12	"

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